

REMARKS

I. Status of the Application

At the time of the Action, Claims 1-6 were pending. All pending claims stand rejected under Section 103(a). These rejections are addressed below.

II. The Section 103(a) Rejections

The Action rejects Claims 1 and 4-6 under Section 103(a) as being unpatentable over U.S. Patent No. 4,344,785 to Jensen (Jensen). The Action characterizes Jensen as disclosing that:

molten glass is fed from a forehearth (col. 4, lines 12-13) (means for producing heated stream of instant claim 1). Figure 1 shows that the molten stream is fed substantially downward. The conduits (12) receive the molten stream of glass (means for receiving of instant claim 1). The column includes a high-pressure glass fiber forming bushing (16 in figure 1) (forming fibers of instant claim 1). The apparatus of JENSEN teaches the method of instant claim 5. The flow rate of glass is controlled by the viscosity of the stream, which is in turn controlled by the temperature of the melt. JENSEN discloses a column that contains temperature control elements, which in turn would control the flow rate of the molten glass as in instant claims 4 and 6. The column also includes a heating device (50 in figure 2) that is composed of electrical heating elements (col. 5, lines 27-28) (means for each effecting change in temperature of instant claim 1). Although the heating device does not directly heat the molten glass stream, it would have been obvious to one of ordinary skill in the art that directly heating the glass would be a known technical alternative. Therefore, the claimed invention would have been obvious.

The Action at pages 2-3.

In response, Applicants respectfully direct the Examiner's attention to amended Claims 1 and 5, which now recite that the vertically downward moving stream is a free-flowing one. One problem faced by glass flake manufacturers is to produce flakes having particular properties, for instance, very small size or uniformity of size or particular shapes. One of the limitations on the

manufacture of glass flakes having desired specific properties is the production of a glass stream which is sufficiently hot. Until the current invention, the only methods known or proposed involved attempting to maintain the temperature of the glass while it is flowing downwardly. Such a method is described in Jensen. The method and apparatus described therein involve the heating of the glass up to a certain (relatively low) temperature in the forehearth. Then the glass is allowed to flow down a ceramic-lined tube in which the ceramic liner can be heated with the purpose of maintaining the temperature of the glass.

In contrast, in the present apparatus and process the temperature of the glass stream is raised while it is downwardly flowing by separating the stream from contact with anything else (so that destruction of apparatus cannot occur) and actually raising the temperature of the free-flowing stream. Jensen in no manner suggests the use of a free-flowing stream, nor does Jensen suggest that the use of a free-flowing stream can improve the production consistency of the glass flakes being manufactured.

In view of the foregoing, Applicant respectfully submits that it would not have been obvious to one of ordinary skill in this art to conceive the subject matter of independent Claims 1 and 5 based on the teachings of Jensen. The secondary reference cited in the Action, U.S. Patent No. 4,713,106 to McCague, fails to overcome the deficiencies of Jensen. As such, Applicant respectfully requests that the rejections under Section 103(a) set forth in the Action be withdrawn.

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III. Conclusion

Inasmuch as all of the outstanding issues raised in the Action have been addressed, Applicants respectfully submit that the application is in condition for allowance, and requests that it be passed to allowance and issue.

Respectfully submitted,



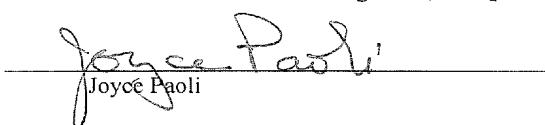
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